

## In the Claims

### Claims Status

1 [0400] 1.(currently amended) A ~~nano-structure~~ composition comprising a nano-particle core  
2 and a ~~nano-shell~~ nano-structure formed an outer surface of the core, where the nano-particle core  
3 comprises a first conductive material and the ~~nano-shell~~ structure comprises a second conductive  
4 material, where the first and second conductive materials are the same or different.

[0401] 2.(canceled)

[0402] 3.(canceled)

[0403] 4.(canceled)

[0404] 5.(canceled)

[0405] 6.(canceled)

[0406] 7.(canceled)

[0407] 8.(canceled)

[0408] 9.(canceled)

[0409] 10.(canceled)

1 [0410] 11.(original) A nano-structure composition comprising a nano-particle core and a plurality  
2 of nano-rods, where the nano-particle core comprises a first material and the nano-rods comprises  
3 a first conductive material.

1 [0411] 12. The composition of claim 11, further ~~A nano-structure composition~~ comprising a  
2 ~~nano-particle core~~, a nano-shell interposed between the core and the nano-rods ~~and a plurality of~~  
3 ~~nano-rods~~, where ~~the nano-particle core comprises a first material~~, the nano-shell comprises a first  
4 ~~conductive material and the nano-rods comprise~~ a second conductive material, where the first and  
5 second conductive materials are the same or different.

[0412] 13.(canceled)

[0413] 14.(canceled)

[0414] 15.(canceled)

**[0415] 16.(canceled)**

**[0416] 17.(canceled)**

**[0417] 18.(canceled)**

**[0418] 19.(canceled)**

**[0419] 20.(canceled)**

**[0420] 21.(canceled)**

**[0421] 22.(canceled)**

**[0422] 23.(canceled)**

**[0423] 24.(canceled)**

**[0424] 25.(canceled)**

**[0425] 26.(canceled)**

**[0426] 27.(canceled)**

**[0427] 28.(canceled)**

**[0428] 29.(canceled)**

**[0429] 30.(canceled)**

1      **[0430] 31.(new)**      The composition of claim 1, wherein the nano-structure is selected from the  
2      group consisting of a nano-shell, a plurality of nano-rods and a nano-shell having a plurality of nano-  
3      rods disposed on a surface of the nano-shell, where the nano-rods comprise a third conductive  
4      material, where the first, second and third conductive materials are the same or different.

1      **[0431] 32.(new)**      The composition of claim 1, wherein the first conductive material comprises  
2      a first metal, metal alloy or a conductive polymer and the second conductive material comprises a  
3      second metal or metal alloy.

1      **[0432] 33.(new)**      The composition of claim 31, wherein the first conductive material comprises  
2      a first metal, metal alloy or a conductive polymer, the second conductive material comprises a  
3      second metal or metal alloy, and the third conductive material comprises third metal or metal alloy,  
4      where the first, second and third metals and/or metal alloys are the same or different.

1 [0433] 34.(new) The composition of claim 32, wherein the first, second and third metals or  
2 metal alloys are the same or different noble metals or metal alloys, where the noble metal are  
3 selected from the group consisting of gold, silver, platinum, palladium, iridium, osmium, ruthenium,  
4 rhodium, and mixtures or combinations thereof.

1 [0434] 35.(new) The composition of claim 33, wherein the first, second and third metals or  
2 metal alloys are the same or different noble metals or metal alloys, where the noble metal are  
3 selected from the group consisting of gold, silver, platinum, palladium, iridium, osmium, ruthenium,  
4 rhodium, and mixtures or combinations thereof.

1 [0435] 36.(new) The composition of 1, wherein the first metal and first metal alloy are selected  
2 respectively from the group consisting of non-transition metals, non-transition metal alloys,  
3 transition metals, transition metal alloys, lanthanide metals, lanthanide metal alloys, actinide metals,  
4 and actinide metal alloys.

1 [0436] 37.(new) The composition of 31, wherein the first metal and first metal alloy are  
2 selected respectively from the group consisting of non-transition metals, non-transition metal alloys,  
3 transition metals, transition metal alloys, lanthanide metals, lanthanide metal alloys, actinide metals,  
4 and actinide metal alloys.

1 [0437] 38.(new) The composition of 1, wherein the nano-structure has a plasmon resonance  
2 having a frequency range at least a portion of which lies in the near infrared region of the  
3 electromagnetic spectrum.

1 [0438] 39.(new) The composition of 31, wherein the nano-structure has a plasmon resonance  
2 having a frequency range at least a portion of which lies in the near infrared region of the  
3 electromagnetic spectrum.

1 [0439] 40.(new) A nano-structure composition comprising a nano-particle core, a nano-  
2 structure formed an outer surface of the core and a bio-compatible polymer coating the structure and  
3 the core, where the nano-structure is selected from the group consisting of a nano-shell, a plurality

4 of nano-rods and a nano-shell having a plurality of nano-rods disposed on a surface of the nano-shell,  
5 where the nano-particle core comprises a first material, the nano-shell comprises a second conductive  
6 material, and the nano-rods comprise a third conductive material, where the second and third  
7 conductive materials are the same or different.

1 **[0440] 41.(new)** The composition of claim 40, wherein the first material is a non-conductive  
2 material, a semi-conductor material or a conductive material.

1 **[0441] 42.(new)** The composition of claim 41, wherein the first conductive material comprises  
2 a first metal, metal alloy or a conductive polymer, the second conductive material comprises a  
3 second metal or metal alloy, and the third conductive material comprises third metal or metal alloy,  
4 where the first, second and third metals and/or metal alloys are the same or different.

1 **[0442] 43.(new)** The composition of claim 42, wherein the first, second and third metals or  
2 metal alloys are the same or different noble metals or metal alloys, where the noble metal are  
3 selected from the group consisting of gold, silver, platinum, palladium, iridium, osmium, ruthenium,  
4 rhodium, and mixtures or combinations thereof.

1 **[0443] 44.(new)** The composition of 41, wherein the first metal and first metal alloy are  
2 selected respectively from the group consisting of non-transition metals, non-transition metal alloys,  
3 transition metals, transition metal alloys, lanthanide metals, lanthanide metal alloys, actinide metals,  
4 and actinide metal alloys.

1 **[0444] 45.(new)** The composition of claim 40, wherein the nano-structure has a plasmon  
2 resonance having a frequency range at least a portion of which lies in the near infrared region of the  
3 electromagnetic spectrum.

1 **[0445] 46.(new)** A nano-structure drug-delivery composition comprising a nano-particle core,  
2 a nano-structure, a bio-compatible polymer coating and a pharmaceutically active agent impregnated  
3 into the polymer coating, where the nano-structure is selected from the group consisting of a nano-  
4 shell, a plurality of nano-rods and a nano-shell having a plurality of nano-rods disposed on a surface

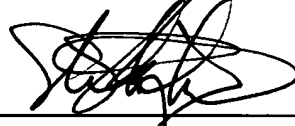
5 of the nano-shell, where the nano-particle core comprises a first material, the nano-shell comprises  
6 a second conductive material, and the nano-rods comprise a third conductive material, where the  
7 second and third conductive materials are the same or different.

1 [0446] 47.(new) A nano-structure drug-delivery composition comprising a nano-particle core,  
2 a nano-structure formed on an outer surface of the core, and a pharmaceutically active agent  
3 absorbed or attached thereto, where the nano-structure is selected from the group consisting of a  
4 nano-shell, a plurality of nano-rods and a nano-shell having a plurality of nano-rods disposed on a  
5 surface of the nano-shell, where the nano-particle core comprises a first material, the nano-shell  
6 comprises a second conductive material, and the nano-rods comprise a third conductive material,  
7 where the second and third conductive materials are the same or different.

1 [0447] 48.(new) A method for treating cancers or diseases comprising:  
2 administering a composition to an animal including a human and  
3 exposing the composition to an electromagnetic, magnetic, electrical and/or ultrasonic field  
4 so that the nano-structures convert the field into thermal energy,  
5 where the composition comprises a nano-particle core, a nano-structure formed an outer  
6 surface of the core and a bio-compatible polymer coating the structure and the core or a  
7 pharmaceutically active agent absorbed or attached thereto, where the nano-structure is selected from  
8 the group consisting of a nano-shell, a plurality of nano-rods and a nano-shell having a plurality of  
9 nano-rods disposed on a surface of the nano-shell, where the nano-particle core comprises a first  
10 material, the nano-shell comprises a second conductive material, and the nano-rods comprise a third  
11 conductive material, where the second and third conductive materials are the same or different.

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Respectfully submitted,



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